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(54) Portable image scanner with optical position sensors

(57) An imaging device (10) may comprise an image head (24) having an elongate slot (38) therein with first and second lengthwise ends (52, 54). The image head (24) may also include a first navigation sensor aperture (42) and a second navigation sensor aperture (44) positioned adjacent the elongate slot (38) at positions other than positions that are aligned with the first and second lengthwise ends (52, 54) of the elongate slot (38). An image sensing system (34) optically aligned with the elongate slot (38) in the image head (24) is responsive to image light (40) passing through the elongate slot (38) and produces an image signal based on the image light (40). A first navigation sensor (48) optically aligned with the first navigation sensor aperture (42) in the image head (24) is responsive to first navigation light (46) passing through the first navigation sensor aperture (42) and produces a first navigation data signal based on the first navigation light (46). A second navigation sensor (50) optically aligned with the second navigation sensor aperture (44) in the image head (24) is responsive to second navigation light passing through the second navigation sensor aperture (44) and produces a second navigation data signal based on the second navigation light.

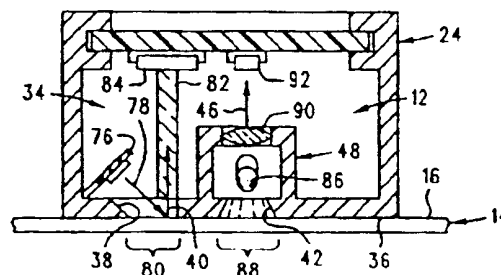


FIG. 4



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EUROPEAN SEARCH REPORT

Application Number
EP 98 11 9516

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
Y	EP 0 426 108 A (KURARAY CO ; NIHON ELECTRONICS CO LTD (JP); MITSUBISHI CORP (JP)) 8 May 1991 (1991-05-08)	1,9,10	H04N1/107
A	* column 6, line 3 - column 8, line 4 *	2-8	
Y	EP 0 786 892 A (HEWLETT PACKARD CO) 30 July 1997 (1997-07-30)	1,9,10	
A	* the whole document *	2-8	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			H04N
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
BERLIN		6 February 2001	Greve, M
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons S : member of the same patent family, corresponding document	

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ON EUROPEAN PATENT APPLICATION NO.**

EP 98 11 9516

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06-02-2001

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0426108 A	08-05-1991	JP 3249870 A	07-11-1991
		US 5075558 A	24-12-1991
EP 0786892 A	30-07-1997	US 5729008 A	17-03-1998
		JP 9214691 A	15-08-1997